**The costs of screening for sight-threatening diabetic retinopathy**

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**Purpose:**

Data on costs of screening for diabetic retinopathy are very limited. We estimated the average costs of annual screening for sight threatening diabetic retinopathy in an established population based photography programme including disaggregated costs of grading, image acquisition and non-attendance, and costs to society.

**Methods:**

Mixed microcosting and observational health economics analysis of data collected in routine screening in the Liverpool Diabetes Eye Screening Programme, established in 1991. Analyses comprised time studies (7 screening sites), resource use: associated staff costs (admin/management, screening, grading), capital (10 year write down) and consumables, and patient and attender costs (self completed questionnaire with assistance if required). Unit costs were directly identified or derived from Unit Costs of Health and Social Care 2017 where necessary. Cost estimates were summed to estimate an average cost per screening attendance from the payers perspective for: the commissioner, the patient, society.

**Results:**

Average commissioner cost (2016-17) for 16,736 screen events attended was £33.61. Ingredient analysis showed cost estimates per attended appointment invitation of £26.07 (administration/management £11.24, image acquisition £8.12, grading £6.71) and for appointments not attended of £12.05 (non-attendance rate 36.9%). Correcting for non-attendance rate this gave a bottom-up cost of £30.52 per screen event attended.

868 patient resource use questionnaires were completed. Costs per patient where incurred were: personal transport - £2.36 car, £6.30 public; productivity loss - £26.08 (33.5% in employment), £23.74 for assistant. Mean overall costs per attendance were: personal travel £2.53, productivity loss £6.09, total societal cost £8.62.

**Conclusions:**

Ingredient costs appear to be similar to the commissioned cost tariff. To address widespread variation in commissioning all aspects of the pathway should be identified transparently. Non-attendance is common, adding around 15% to the programme costs. Moderate savings (10-15%) per case could be achieved through introduction of automated grading. Societal costs are significant for certain groups and may hamper access.

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